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Proving or Improving Visual Education: Implications for Teacher Education

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Knowledge, as central to sustaining society and culture, is becoming increasingly dependent on the visual. While other signs and symbol systems such as text and numbers have dominated, and other arts forms such as music and dance are able to express and reveal the pulse of human existence, it is the emergence of new visual technologies and new multi-modal forms of the visual that see us expressing and communicating, as never before, in a wide variety of visual forms and materials - including multi-media, web, video, photography and film - along with expressions and communications through design objects and the more traditional forms of art and crafts. Many of these forms of visual expression and presentation are penetrating deeply into everyday work and life. As the nature of the (visual) world is transforming and enlarging, so is the way we develop knowledge and act in the world. This creates new opportunities and a demand for skills that enable people to function within the mediated, graphic and performative environments (Druckery, 1996; National Standards for Arts Education, 1997).

These technological along with the associated communications and aesthetic shifts are occurring globally within the developing Knowledge Economy (Home Affairs Bureau Hong Kong Special Administrative Region Government, 2005; Prime Minister's Science Engineering and Innovation Council, 2005), which places an emphasis on creativity, innovation and imagination (Florida, 2002; National Advisory Committee on Creative and Cultural Education, 1999/2001). So education for our increasingly visual world needs to be in a form that engages creative, innovative and imaginative behaviour. Given this scenario with its clear economic, social and cultural implications, we need to consider whether current teaching and learning is preparing students sufficiently to participate in this increasingly visual world?

In 2005 the Australian Government (represented by DEST, DCITA and OZCO[1]) commissioned the *National Review of Education in Visual Arts, Craft, Design and Visual Communications* which for ease of communication is referred to as the *National Review of Visual Education (NRVE)*. In commissioning this Review it was stated that:

> Arts education offers rich and complex learning opportunities and powerful developmental experiences for young people by fostering cognitive, social and personal competencies for lifelong learning and fulfilment. Arts education develops innovative and creative minds equipped for the knowledge society and also provides meaningful connections and social experiences for disadvantaged or 'at-risk' students.
>
> The ubiquity of visual information and communication in contemporary society means that artistic and visual literacy are increasingly as important to success in work and life as numeracy and language skills. To keep pace with, and contribute to the world of rapid and constant economic, social, technological and cultural change, young people's creative and visual capacities must be well developed (Request for Tender, p.4).

In undertaking the Review, the research team proposed a new conceptualisation of education for developing capacities in the area of visual expression and communication for the contemporary world. Based on extensive research, the team adopted *Visual Education* as a conceptual and pedagogical framework for the purposeful development of students' practical, aesthetic, creative and professional skills and knowledge to enable effective engagement with the visual in a multiplicity of ways within social and cultural contexts. The key features of Visual Education are that:

1. it embraces a range of subjects and disciplines unified by the primacy of the visual;

[1] DEST: Department of Education, Science and Training; DCITA: Department of Communications, Information Technology and the Arts; OZCO: Australia Council for the Arts.

2. it emerges as a field of education because of changes in the broader community that are driven by digital technology, new forms of communication and expression along with the associated demands of the economic, cultural and social aspects of contemporary society;
3. it appears across different phases of schooling and is taught and learnt in different parts of the curriculum;
4. it is primarily generative in nature and is lodged in practice-based subjects. It is grounded in the embodied learning principles that distinguish practice-based subjects - 'learning by doing' or 'learning by making';
5. it is culturally contextualised and led theoretically and educationally by practice-based disciplines such as visual arts, design and media productions;
6. it does not diminish traditional areas of study such as visual arts but repositions them to allow for growth and continuing relevance;
7. it develops 'visual literacy' for all students effectively and meaningfully through active engagement in forms of visual expression and communication;
8. it develops important understandings about each person's sense of self and identity as well as their place in society through expressive and vocational opportunities.

The Review of Visual Education's research team also identified four essential attributes of effective Visual Education. These are:

1. **Studio-based experience**: hands on, embodied practical and cognitive learning through students actively engaging in processes of expressing and communicating visual ideas, applying skills, techniques, processes, conventions and technologies, exploring creativity and innovation for real or authentic audiences and purposes;
2. **Working with materials**: expressing and communicating ideas with authenticity and exploring creativity and innovation through physically working with a range of materials;
3. **Relationships of trust**: students and teachers as active co-constructors of learning, promoters of communities of inquiry, working with trust in studio-based mentor/learner relationships;
4. **Applied aesthetic understanding**: the dynamic individual relationship that each student develops with the arts through active processes of engagement at the intersections of three dimensions:
    a. what they already know, understand, value and can do in visual expression and communication;
    b. their own past experiences of the arts of their own and other times, their own and other cultures and places;
    c. the potential of all experiences and materials available to them.

In proposing Visual Education as a field of education, the researchers emphasise that Visual Education is an emergent field that is in a state of flux because it is being driven by ongoing changes in the broader community. They found that there were examples of exemplary visual education practice in Australian schools, but that this was not universal. They also found that there was a need for more clearly articulated policies, syllabi and support for Visual Education in its emerging context; a matching need for better collaboration across the curriculum; and a need to address impediments such as some elements of school organization and timetable structures. Also identified was that the knowledge, understanding, skills and values of teachers were critical in the development of Visual Education. Pre-service and in-service teacher development needs to meet the imperatives of

Visual Education. This prompts the question that is the general subject of this paper: *Is teacher development adequately meeting the needs of contemporary Visual Education?*

Review of Teacher Development

A major strand of the *National Review of Visual Education* was a Review of Teacher Development in relation to the capacity to deliver visual education. Key findings made by the research team were a critical need for improved delivery to Early Childhood and Primary students of visual education that embraced innovative visual technologies; and that new approaches to teacher development for this area were required.

The data gathering mechanisms employed for the Review of Teacher Development were:

1. A review of research and educational literature;
2. A review of information about courses provided on tertiary institution websites;
3. A questionnaire sent to tertiary Education faculties;
4. Telephone interviews with academic staff in tertiary institutions;
5. Focus group interviews with teachers, students, art professionals and parents;
6. Site visits and interviews with teachers and school personnel;
7. Responses posted on the NRVE website by a range of educational professionals, parents and other stakeholders.

The scope of the study was broad and the range of information-gathering strategies employed provided rich data that illuminated the nature of Australian teacher development in Visual Education and the challenges to be addressed. Early Childhood, Primary, Middle School and Secondary pre-service courses, including permutations such as Junior Primary and K-7 courses, were examined – with Early Childhood, Primary and Secondary courses representing the most common course profiles. Professional development for teachers was also examined.

The particular limitations of the study relate to quantifiable data. Whilst pre-service Education courses have similar attributes, operationally they are quite diversified in terms of course structures, content and terminology. For example, descriptors - such as *course, program, subject,* and *unit* - are terms used in different ways by different institutions. This made comparative studies and numerically conclusive information difficult to obtain in some instances.

In Australia, undergraduate and post-graduate teacher education is provided by 37 universities and four tertiary colleges or institutes. The number of universities that participated in the survey represents 46% of teacher education providers. The size of the student population at these institutions varies from <500 EFTSUs[2] to > 4000 EFTSUs with four universities in the survey having student populations of >3000 EFTSU. In 2005, 15 universities graduated 70% of teachers (Teacher Education Accreditation, 2006, p.5). So in terms of impact, the big providers represent the main focus of teacher education in the country. Their representation in the survey gives weight to the findings.

The biggest provision of Visual Education occurs within Visual Arts. Consequently, much of the data collected reflect Visual Education from the perspective of people engaged with Visual Arts. At the same time, those engaged with Visual Arts are the ones most likely to have the greatest influence on the development of the field. Data gathered about other areas of Visual Education were necessarily limited.

[2] This acronym stands for 'equivalent full-time student units' and is the standard measure of student enrolment used within universities.

Whilst the Review team identified broad characteristics of effective visual education, the limited knowledge base about effective approaches to teacher education as encapsulated in the recent Teaching Australia report on teacher education accreditation (Teacher Education Accreditation, 2006), and more specifically in relation to Visual Education, has to be acknowledged.

Structural factors determining pre-service teacher education in Visual Education

To assess the provision of Visual Education in pre-service teacher education the factors that were considered are:

- Intention of course preparation with regard to specialist or generalist teachers;
- Length of course;
- Course structure and categories of units. E.g. number of curriculum units, number of educational studies units;
- Type of unit content offered within visual education. E.g. pedagogy units, subject content units;
- Status of units with regard to being compulsory or elected;
- Sequencing of units with regard to scaffolded learning;
- Number of hours of study devoted to visual education overall.

However, to fully assess the opportunities for visual education in a pre-service degree, the entry capacities of student-teachers also needed to be assessed.

In this paper, the main focus is the provision of Visual Education learning for student-teachers entering the Early Childhood and Primary sectors. In this regard, the provision by tertiary institutions is quantified and the general capacities of student-teachers entering the pre-service programs is discussed. The Middle School and Secondary sectors were also part of the National Review, but they are only briefly referred to here. Similarly, professional development for teachers in service was an important part of the National Review of Visual Education but is only briefly referred to in this paper.

Secondary courses prepare teachers who are subject or Learning Area specialists whilst Early Childhood and Primary courses prepare 'generalist' teachers. Though some of these courses do allow for the development of areas of curriculum strength, the concept of specialist teachers in Early Childhood and Primary settings is not well supported. Courses for Middle School teaching are, in most instances, a Primary course extended up or a Secondary course extended down – with associated generalization or subject specialization. The Review team considered that the 'Secondary down' model provided the best prospects for increased quality of Visual Education reaching into the Primary sector because of the attention given to the development of content-based knowledge in specialist courses.

Courses to qualify teachers fall into two distinctive categories with various permutations. Undergraduate courses require student-teachers to engage in four years of study towards becoming a teacher. Graduate Diploma courses and their variations require students to complete a university degree before undertaking a one-year, or sometimes two-year, course for teacher qualification. Assessment is made about the suitability of the undergraduate degree for the chosen area of Secondary specialisation before entry into the Graduate Diploma is granted. For people applying to enter a Graduate Diploma course to qualify as a generalist Early Childhood or Primary teacher, subject specificity is not considered such an issue.

Ii is evident that in a one-year graduate program for student-teachers will provide quite limited opportunities for Visual Education, so the undergraduate degree that student-teachers arrive with is very significant. Several universities report that in recent years there has been a notable rise in enrolments in a one-year Graduate Diploma for Early Childhood or Primary teaching – often eclipsing the enrolment into the undergraduate degree. In these instances we see a larger percentage of graduating teachers with only cursory education

about visual arts or the concept of Visual Education – expected to deliver a valid program in this area for young children.

The course structures of teacher education courses typically have a core of "educational studies" or "essential learnings", a suite of curriculum units and teaching practicum. Electives and specialisation streams are also features of a number of courses. These usual structures reinforce discipline/curriculum divisions, though in some courses, emphasis has been placed on integration and this is reflected in unit structures and unit groupings.

Visual Education in pre-service courses occurs primarily within units where the subject or discipline area is identified variously as Visual Arts, The Arts, Design/Visual Communications/Graphics, Digital Media and/or Multi-literacies. Predominantly, visual education is provided within the Visual Arts/Arts context. Other opportunities are within Design & Technology or Technology & Enterprise or Multi-literacies contexts but such opportunities are limited in terms of the number of offerings. Some courses for qualifying teachers make no specific provision for visual education in any form. Teaching Practice placements enable student-teachers to practise teaching different subjects but in Primary schools, it is difficult to mandate that lessons in Visual Education areas are included.

Within the subject divisions of visual arts, the arts, design/visual communications/graphics, digital media and/or multi-literacies, unit content falls into eight broad categories. The first category is distinguished by being focused on the practical aspects of teaching the subject. Typically such units cover school curriculum, pedagogy and planning. Usually student-teachers work through some practical learning activities (e.g. art activities) that are appropriate for school students. References to aspects of educational theory, policy and relevant matters such as the nature of learning, creativity or integration are usually incorporated into these units, but the unit's orientation is resolutely towards the practical and functional elements of teaching in the nominated subject or Learning Area.

The second category of unit content type is the one that focuses on developing the student-teachers' own performative capacities in the relevant subject (e.g. Visual Arts). These units may include elements of theory or issues relevant to the subject. Linkages are sometimes made to school application but essentially, these units aim to build a student-teacher's own skills, knowledge, confidence and capacity in the subject (e.g. to make art themselves, to communicate and make meaning in visual formats).

The majority of units offered in Visual Education fall into these first two categories. By categorising units in courses according to their orientation, it is possible to determine the degree to which different aspects of education are being addressed – as will be shown later.

Units in courses are compulsory or elected by each student-teacher. There are different configurations of compulsory and elected units. For example, student-teachers may be required to elect units from within a prescribed set or to elect a specialisation stream and then complete the required units within the stream. When reviewing the amount of time devoted to Visual Education it is important to distinguish compulsory hours from elected hours since the number of hours of compulsory Visual Education represents the total amount of Visual Education the majority of student-teachers receive. Some teacher education courses have no compulsory hours devoted to the concept of Visual Education or to Visual Education subjects such as Visual Arts.

Teacher Education for Visual Education Competency

Secondary

Secondary teacher-education courses are discipline-based and the highest concentration of Visual Education is in Visual Arts. In Secondary schools, and therefore Secondary pre-service teacher education, the Visual Arts maintains a separate identity and is not subsumed within the Arts as it is within most Primary, Early Childhood and Middle School courses.

The researchers found that, in the main, Secondary pre-service teacher education courses are structured to provide a sound preparation for Secondary teaching in Visual Education subjects. Whilst there may be concerns about substance and some of the limitations on cross-disciplinary explorations, the research team's view is that these matters could be substantially addressed within existing structures.

The four year B Ed and the double degree models support a sustained focus by pre-service teachers on developing as an educator within an area of specialisation. Developing skills and capacities within the nominated discipline – as well as pedagogic capacities - is regarded as an integral part of Secondary teacher-education – and this is seen as a strength. Usually 50% of the course is given over to developing personal knowledge-base within the discipline. Consistently, this aspect of the course is delivered outside the Education faculty. There are both benefits and challenges in this division of responsibility, with the degree of its success dependent on communication and relevance of the subject matter. The Graduate Diploma model was seen as generally successful but there were concerns around breadth of experience and the capacity for graduates to translate personal arts interests into educational experiences that meet a range of students' needs. Academics and teachers were mixed in their preference for the undergraduate or Graduate Diploma model.

It was observed that all Secondary student-teachers, regardless of Learning Area specialisation, needed opportunities to improve their own Visual Education. However, access to Visual Education offered by the main curriculum areas (Visual Arts, Visual Communications and Design & Technology or their equivalents) was limited by course structures.

Early Childhood and Primary

In relation to Early Childhood and Primary courses, the Review found that:

- Visual Education, in terms of its coverage of visual capability, is lodged primarily within The Arts in Early Childhood and Primary programs.

- Recognition of the concept of multi-literacies is evident in Early Childhood and Primary courses, though how it is addressed varies and the potential for practice-based educators to contribute to this area is greatly undervalued.

- There are limited hours devoted to Visual Education subjects or concepts with some courses having no compulsory hours of Visual Education.

- The digital media interface is well established in student-teachers' university experience, however the creative use of digital media is much more limited.

- Besides being proficient personal users of digital technologies, student-teachers also needed enhanced understanding of how to use digital media skills effectively to communicate visually and to support children's learning.

- The limited hours available for Visual Education have led to an emphasis on pedagogy. There is a de-emphasis on student-teachers' own visual arts learning in favour of pedagogic learning.

- Early Childhood and Primary education students, in the main, have had little visual arts/media/design experience (or any arts experience where they engage in practice-based learning within cultural/aesthetic understandings) prior to enrolling in their Education course. Therefore limited opportunities in Education courses to build a student-teacher's own visual arts/media/design capacities, is of significant concern.

- If student-teachers have modest creating/making/performing capacities and understandings themselves, they struggle with understanding and developing authentic learning opportunities in practice-based areas of visual learning (visual arts, craft, design, media production).

Hours devoted to Visual Education in Early Childhood and Primary courses

Analysis of the data shows that the hours devoted to Visual Education are limited in Early Childhood and Primary pre-service courses. This is primarily a function of the 'crowded curriculum' syndrome that is being experienced at all levels of education.

Of ten Early Childhood Education courses examined in the survey, the average number of *compulsory* hours of Visual Education is 39.5 hours. This is equivalent to 13 sessions x 3 hours of class contact. The median is 24 hours, which represents 8 sessions x 3 hours of class contact for the duration of the course.

The *compulsory* hours of Visual Education in 22 Primary courses range from 0 to 157 with the average number of compulsory hours being 26.09 hours for the duration of the course. This is equivalent to approximately 9 sessions x 3 hours of class contact. The median is 16.5 hours, which represents 5.5 sessions x 3 hours of class contact for the duration of the course. Seventeen of the 22 courses have less that 52 compulsory hours devoted to Visual Education and seven other courses had no compulsory hours at all. Of these seven courses three had provision for students to choose Visual Education units as electives if they wished.

As new courses are brought on stream, the trend is for hours devoted to Visual Education to be reduced rather than increased. As one university academic claimed, "they've reduced the two arts units we currently have to one, which will be impossible. I argued strongly against it but there is no time in the new structure, so we're diminishing rather than expanding". There is the possibility that the hours lost to a traditional Visual Education area such as visual arts are being picked up in another context but the data don't support this.

Another factor in the diminution of visual arts is the nomination of Learning Areas, or their equivalents, as organisers for the school curriculum. Teacher education courses typically allocate a set number of units to curriculum studies. Competition for these timeslots by the different areas of the curriculum is fierce and it is difficult to argue for extra units so that the different subjects within a Learning Area can be addressed separately. Never-the-less, at least two new courses have retained separate curriculum units in visual art, music and drama (all subjects in the Arts Learning Area) as well as electives in the "Expressive Arts" where opportunities for integrated practice is provided. The academics involved indicated that achieving this outcome was hard won – but still represented less Arts units than before.

Student-teachers who complete a one-year or two-year Graduate Diploma to qualify as an Early Childhood or Primary teacher necessarily receive a more limited introduction to the idea of Visual Education or visual arts education. If the percentage of students enrolling in this form of teacher qualifying course rises significantly (as it has in some individual universities), then the actual number of graduating teachers with only the most cursory education in visual arts or the concept of Visual Education - increases. The flow-on effect of this is evident.

Overall, the trend in Early Childhood and Primary courses is for less Visual Education hours than before. The researchers found that, in the main, the number of compulsory hours for visual arts - or Visual Education more generally - was modest or negligible.

The limited time available for Visual Education has resulted in strategies being implemented for the purpose of using the contact time as effectively as possible. The provision of on-line resources has been a major development in this regard. On-line lectures, web-based units with on-line workshops and on-line support materials are used in a number of instances. At one university, when face-to-face contact hours were cut in the revised Bachelor of

Education degrees, an on-line workshop in visual arts pedagogy was developed to allow the reduced amount of face-to-face contact to be devoted to practical studio learning and group work. This was considered less than desirable by the teacher educator and the student-teachers involved, as it created an artificial division between theory and practice, but it was seen as the best solution under the circumstances.

At another university, one third of the students completing a "Learning through the Arts" unit, were externally enrolled, so emphasis was placed on students learning how to present material in a digital format. As the lecturer described it:

> [T]hey have to come to terms with how they're going to do digital story telling, how they're going to record process, how they're going to record product because we don't want them to send in their quilting or their sculpture or whatever. They need to show us examples of it in a digital format.

Whilst innovations were impelled by a desire to enhance a program, it should be noted that the research team found that, in far too many cases, innovations were implemented to make the best of a diminution of educational provisions in the area of Visual Education.

Content in Visual Education units in Early Childhood and Primary pre-service teacher education courses

Curriculum and pedagogy studies are an important factor in preparation for effective teaching. So too is subject knowledge (Darling-Hammond, 1999). The National Framework for Professional Standards for Teaching (2003, p.3) states, "teachers have to be both knowledgeable in their content area and extremely skilful in a wide range of teaching approaches". However, in the courses examined, the researchers found that curriculum and pedagogic learning was consistently privileged over the development of subject knowledge. This was seen as being a direct result of the limited hours available for Visual Education in the Early Childhood and Primary courses. Emphasis on curriculum and pedagogical studies (or 'the child as learner' in some Early Childhood applications), had led to a concomitant de-emphasis on student-teachers' own visual arts learning. Many respondents felt that the concept of 'embodied learning', which underpins the practice-based disciplines involved with making/creating/performing, was not well understood nor valued by other teacher educators.

Integrated learning is a feature of current Early Childhood and Primary education and there is a pattern of restructuring units in courses to reflect this principle. In itself this is not a negative development, however, when student-teachers have limited understanding of discipline areas, it reduces the likelihood of a meaningful interpretation of integration. In at least one case the approach to integration adopted within the course meant that the visual arts were dissipated across units that were co-ordinated by academic staff who did not necessarily have a particular affiliation with, or interest in, visual arts, nor an appreciation of the significance of visual communication formats. A respondent described it this way: "They just pretend the arts don't exist … they use the same [unit] outlines but do 'quick and dirty' stuff, like send some students to a high school for a Saturday workshop".

Where subject disciplines are maintained, it is usually within Learning Area constructs. The researchers found that in Early Childhood and Primary programs, Visual Arts (the main provider of visual education) was lodged primarily within The Arts. Of the courses examined, 73% of curriculum and pedagogy units were in The Arts compared to 27% in Visual Arts specifically. This represents another way in which a diminution of visual arts education can occur.

Compulsory hours/units represent the total number of hours of Visual Education that the majority of student-teachers will have. Typically such units focus on the practical aspects of teaching supported by foundational understandings about education in the discipline. Ten of the 17 *compulsory* units in the 10 Early Childhood courses were of this kind. Of 28 Primary *compulsory* units in the 22 Primary courses, 23 were of this kind. There were only two

compulsory units orientated towards developing students' own performative/creating/making capacities in the discipline. Five units at one university addressed visual literacy in the context of visual texts.

Overall the compulsory units with any visual education content were primarily found in The Arts or Visual Arts. These units had titles such as "Foundations in Creative Arts", "Learning Area: Arts 1", "Early Childhood Arts Education", "Young Children and The Arts", "Visual Arts Curriculum and Pedagogy", "Learning through the Arts" or "Methods of Teaching (Visual and Performing Art)".

Other compulsory units such as "Early Childhood Literature and Literacy" included visual literacy as part of developing children's literacy. In a unit entitled "Teaching Reading", the Visual Education content is described as "visual texts were used as tools to support literacy learners". "Images of Childhood" is a compulsory unit described as being "a unit where students explore the social construction of childhood and teaching as evidenced within the production of images within the media and in the field of visual arts".

Compulsory units that addressed design and technology for the Primary sector, such as "Technology, Curriculum and Pedagogy" were not well represented in the data. However, the description of one compulsory unit titled "Teaching the Arts in Primary School" is that it is "a foundation unit: discipline-based visual arts and music education – strong ICT component", suggesting that digital technology is being addressed in alternative contexts.

Specialisation opportunities

The limited hours available for Visual Education and the resulting focus on curriculum and pedagogy issues means that there is little opportunity to develop student-teachers' personal knowledge and capacities in areas such as visual arts, media, design or visual education more generally. Elected units in areas of interest is one way that student-teachers are able to extend their experience in a particular subject or discipline. Such electives are offered by less than half the courses in Early Childhood, Primary or Early Childhood & Primary that were examined, and the hours of study vary from 36 (equivalent to one semester unit) to 244. Except in three courses, these hours are in addition to compulsory hours.

Whilst the concept of specialist teachers in Early Childhood and Primary settings is not well supported, the report on the Survey of Final Year Teacher Education Students (2006) shows that 27.7% graduated with qualifications to teach specific subjects. Of this group, 19.5% had specialisation subjects in Visual and Performing Arts. There is no information about what constitutes "qualification to teach special subjects". The NRVE researchers observed that specialist teachers currently in schools may have come from such programs but many are simply nominated as the specialist teacher.

Course content and student-teachers' prior experience

Interviews with academic staff working in Visual Education subjects revealed a consistent concern that overall, there was not enough time in the course for the development of what they regarded as a satisfactory level of capacity and understanding within the discipline for all student-teachers.

The focus on valuing visual art in education was based on the belief that unless student-teachers appreciated and believed in the value of visual arts education, they would not take responsibility for incorporating it into their teaching nor be able to distinguish authentic visual arts education from poor.

There was a shared view amongst university respondents that less time was leading to a "pre-masticated version of content", and that "survival education" was increasingly the norm. Consistently, teacher education staff reported that they could do little more than introduce their student-teachers to the discipline and provide a few foundational concepts.

This has to be seen as inadequate in light of the challenges facing future teachers. Another shared observation was that the majority of student-teachers bring limited arts experience to their education studies – which compounds the problem of limited time.

Research shows that Early Childhood and Primary teacher-education students, in the main, have had little arts experience prior to enrolling in their pre-service course and are not confident in the area. The 1995 Senate report *Arts Education,* in noting that generalist Primary teachers were, in the main, ill-equipped to teach the arts (p.42), claimed that this was a reflection on both pre-service teacher education and the teachers' negligible experience in the arts and lack of confidence. Since Visual Arts is subsumed within The Arts these findings apply equally to the primary form of Visual Education being offered in schools.

The findings of the Senate Report are also substantiated by more recent research findings (Dinham, 2003) that the arts experience of the majority of Early Childhood and Primary student-teachers, prior to their entry into their education degree, is both minimal and lacking recency. A survey of a first year cohort of 250 students, at entry, revealed that most Primary student-teachers (56%) had not any visual arts education beyond Year 8 and nearly three-quarters (73%) had not undertaken any art education in the preceding five years. This lack of experience extended to informal engagement as well as more formal forms of engagement - which means that overall, the level of skill, knowledge, sensibility and conceptual understanding within the group is modest and lacks recency.

If student-teachers have modest creating/making/performing capacities and understandings themselves, they struggle with understanding and developing authentic learning opportunities in practice-based areas of visual learning. The problem of limited experience is compounded for the 28% who report (Dinham) that they were not confident, nor interested in visual arts. On the other hand, 58% of respondents in this study, whilst claiming they had little experience or engagement, also expressed an enthusiasm for visual arts.

Despite many student-teachers lacking a personal background in visual arts, over three-quarters of respondents (76%) – prior to engaging in art education studies – nominated that "developing imagination and expression" was the most important role for visual arts in the school curriculum. Never-the-less, 10% of students nominated "to provide a good break from other subjects" or "to make other subjects more interesting by including art activities in them" or "to make the classroom a nice work environment and interesting to look at" as the *most important* role for visual arts in the school curriculum. Also, whilst the majority of student-teachers nominated "developing imagination and expression" as the most important role for visual arts in the school curriculum, their understanding of what this means and how it is fostered, was untested.

It is encouraging that there is a substantial enthusiasm for visual arts and an instinctive understanding of its relevance to education amongst the inexperienced group. However, the National Review of Visual Education revealed that there were limited opportunities for these student-teachers to substantially improve their background and conceptual understanding in the visual arts, while completing their teaching degrees. Whilst practical skills and processes are easily taught, more complex learning such as visual thinking, aesthetic sensibility, meaning-making, problem solving and creative thinking, evolve through practise and extended engagement. Broadly speaking, these capacities remain under-developed across the sector.

Eight university respondents indicated that, within the modest time available, they saw their primary task as being simply to help student teachers gain confidence in being able to 'make art'. Four respondents talked about needing to reduce students' 'fear' of art. Beyond these aspirations, the focus for teacher educators was on helping student-teachers to value art in education (mentioned by 50% of respondents) and to acquire some basic (art) skills (mentioned by 33% of respondents).

Several lecturers from different institutions described some of the strategies they adopted to challenge poor conceptions of Visual Arts education. For example, one approach was to require student-teachers to keep reflective journals of their own learning. However, it was observed that even when student-teachers achieved certain realisations about the nature and value of authentic Visual Arts education, they had difficulty capitalising on it because of their superficial experience and capacity to interpret the content knowledge.

The Review team observed that if emerging teachers have limited capacities and understandings of the field, they will struggle with understanding and developing authentic learning opportunities in practice-based areas of visual learning.

The emergence Visual Education is driven substantially by the visual nature and increasing centrality of digital forms of communication and expression. The nature of learning and knowledge as well as the way we act and express ourselves (Bamford, 2006; Fiske, 2000; Robinson, 1999; UNESCO, 1999.) are being shaped by these developments. In relation to pre-service teachers' experience of digital communications, the researchers found that all university students work in a digital environment. All universities have websites and manage most administrative processes through them. Students are issued with their own email address and password - and wireless access on-campus is widely available. It is common for software such as Blackboard© or WebCT© to provide an on-line presence for units to support communication and electronic presentation of material. PowerPoint© or similar software is widely used for lecture presentations and podcasting of lectures is becoming a feature across the sector. Other technological aides such as the interactive whiteboard are less widely distributed through universities. In the United Kingdom, this visual presentation format is well-recognised for its superior capacity to support learning visually and interactively. As part of a government initiative it is widely integrated into UK schools.

Within areas of the teacher-education courses devoted to Visual Education, there is an added interest in student-teachers being digitally proficient. One academic indicated that in their integrated arts education program they had:

> [A] high level of expectation for students to be engaged technologically. For example, both units require students to submit portfolios digitally. We also require students to create knowledge products using technology.

Another university respondent observed that access to technology was driving spontaneous changes in presentation formats. For example, documentation styles within visual arts education units were changing due to the increased ownership of small digital cameras and mobile phones with camera facilities. Student-teachers, on their own initiative, began to visually record stages of art processes and activities for inclusion in their educator's resource portfolios.

> There has been a marked increase in the visual documentation of process and art products in the last eighteen months. It was spontaneous really and I just encouraged it by suggesting we all agree to being photographed or having our work photographed for the purposes of improving documentation and sharing ideas. No-one has objected. I also put photos up on the on-line site for students who don't have cameras, but usually students share their images with each other anyway.

In another university, the focus in the arts education units was:

> [O]n delivery through the visual… we've gone to great lengths to ensure that there is a high level of visual engagement provided for students [in the PowerPoint© presentations]. Even though they complain bitterly about download times and size of files, etc. We have worked very much trying to ensure that they are stimulated visually – that they recognise that they're living in a visually literate society.

Whilst the capacity to work with digital technology is considered an imperative within teacher education, the nature and structure of student-teachers' education in digital media is

varied. Some courses provide specific digital media workshops or units that are either optional, based on proven proficiency, compulsory or elective units. In most instances digital technology education is offered in multi-literacies units. One Primary B Ed course had a compulsory multi-literacies unit and a three-unit elective pathway in "Digital Photomedia", "Communications and Digital Technology", and "Publishing on the World Wide Web" but this seemed the exception. In other courses, digital technology is integrated into all units. This was sometimes at the discretion of the unit co-ordinator and in other courses, was based on a formal mapping of an agreed set of skills and capacities across the whole course.

The research team noted that there exists a distinction between those units or workshops that are (a) focused on how to use the software, (b) those that interrogate the nature and form of digital communication, (c) those that identify and evaluate technology as tools for children's learning, and (d) those that focus on the generation of art and design works by incorporating technology in the creative process or by creating final works in digital formats.

Of these categories, the Review team observed that the use of digital technology is least prevalent within Early Childhood and Primary programs in the areas of artistic creating and designing. This was partly due to limited access to computer facilities. A respondent reported that they had been instrumental in establishing an integrated computer facility in the art and design studio complex. However, recent course changes had diminished the size of the blocks of time and the overall hours devoted to art and design studies. The academic observed that opportunities to work on art projects that incorporated the use of digital technology were diminished because of the limited time available for building skills to apply to visual arts projects. This equally applied to a number of other art processes where extended time was required to learn them adequately. As a consequence, low technology options were chosen instead.

The data show that overall, the use of digital technology for visual, creative expression is not expressly and uniformly addressed within teacher education for Early Childhood and Primary sectors, yet there was wide agreement that beginning teachers should be personally proficient in the use of digital technology for creative ends. That said, it is important to recognise that student-teachers also need to be conversant with a range of non-digital processes for expressing themselves visually.

The Review team noted that across universities, there was little explicit coverage or recognition of the use of digital technologies in children's education, and limited evidence of design and visual communications education. Whilst younger student-teachers generally had well-developed digital skills, they still needed to learn how to use these skills effectively in a school setting to support and enhance children's learning. It was observed that student-teachers needed to improve their capacity to present information in visual form. This was evident in relation to lesson preparation and delivery – and has two dimensions to it. One was design and layout of visual material, and the other was an understanding of *what* would benefit from being presented in visual form and *how* to do this effectively. It was suggested that student-teachers need specific education in presentation in visual formats – from the simplest hand-drawn chart to video, Powerpoint© and website presentations.

Multi-literacies units are found in a number of Early Childhood and Primary courses though the content of such units varied. Some multi-literacies units addressed visual literacy in terms of reading visual images but others didn't, beyond a passing acknowledgement. One respondent observed that there was also a reluctance to employ art specialists to teach in the multi-literacy units and this appears consistent with other information gained by the researchers. These views are consistent with data gained from websites and the questionnaires sent to universities. Whilst the content of a multi-literacies unit varies, the consistent exclusion of contributions from educators who come from visual arts and media production backgrounds is problematic – and misunderstands the underlying concept that contemporary modes of expression require multiple literacies.

One teacher educator explained how they included media within visual arts units in order to focus on the use of media in the context of creative production - rather than using the written approach to media adopted by English. This was seen as approaching multi-literacy in a way that acknowledged how new media requires multiple literacies and multiple modes. It was suggested that developments in the area of multi-literacies needed more input from people with an arts or media background. As one tertiary educator described it:

> Artists have a lot to contribute in [the multi-literacies] area because we understand symbolic language and non-written symbol systems. We're really in tune with screen culture. Added to that, multi-literacies units need to be hands-on and students need to be making. In multi-literacies we need to get students to engage with multi-modal, multi-media texts. [Rather than] write about them, ... get them to deconstruct them and reconstruct them and transform them into multi-modal, multi-media meanings.

Professional development for teachers

In this paper attention has been given to Early Childhood and Primary pre-service teacher education for an increasingly visual world. However, the research team for the National Review of Visual Education observed that the dynamic nature of the teaching profession, the increasing complex knowledge base and the rapidly evolving learning environment all point to the need for teachers to be seen as lifelong learners as described in *A National Framework for Professional Standards for Teaching* (2003).

One way of investing in teachers to improve Visual Education is by adopting policies and practices that improve the retention of good teachers in the profession and that also improve the match between teachers' expertise and their teaching assignments (Little, 1999). The Review of Teaching and Teacher Education (2003), using MCEETYA data, highlighted the fact that a substantial number of Secondary teachers were not teaching in their area of specialisation. According to the 2003 data, 17% of teachers who are best qualified in the area of Visual and Performing Arts were not teaching in this area as their first or second main subject area. Similarly, teachers identified as specialist teachers within the Primary sector were often classified according to assigned teaching duties rather than qualification and expertise. The reasons why there is not a reliable match between teachers expertise and qualifications are various but clearly, a professional development strategy can minimize many negative effects by supporting teachers with targeted professional learning opportunities (The Review of Teaching and Teacher Education, 2003) and opportunities to enhance existing qualifications to match changes in career direction.

The research evidence about what constitutes appropriate professional development for achieving good quality Visual Education in schools is not well developed. However in general terms, since the most powerful indicators of teacher quality are expertise in relevant subject content studies coupled with skills in teaching and learning (Darling-Hammond, 1999 p.9; Watson, 2005.), professional development that supports subject knowledge and skills learning as well as pedagogic skills would to be efficacious.

The Review of Teaching and Teacher Education suggested that

> Professional learning opportunities span postgraduate education, specialist diplomas, research, projects, workshops, conferences, speaker rostrums, panels, development projects, study tours, visits programs, individual guidance and tuition, summer schools or camps and industry placements. School-based curriculum development and assessment and school self-management contribute to professional learning through well-grounded experiential learning. It is important to keep in mind non-formal and unstructured learning as well as formal learning. (2003, p.157)

The National Review of Visual Education's researchers found that Visual Education teachers had clear ideas about what they needed; and that the range of professional development needs for Visual Educators corresponded to those suggested by the Review of Teaching and

Teacher Education. In particular, a number of respondents mentioned the need for extended blocks of time to undertake artistic development as professional development. Allocation of blocks of time is something that may not be universally required by all teachers but is regarded as being particularly relevant for teachers working in practice-based areas of Visual Education.

The Review noted that for experienced teachers working in practice-based areas of learning, opportunities to engage in their *own* practice is often critical for their confidence, rejuvenation and credibility within the subject. Many visual arts teachers decried the lack of time and support to continue their own arts practice. Yet one of the ways of ensuring the delivery of good quality education would seem to be through teachers' commitment to their own practice in the field. In the course of the Review, many art teachers expressed a "desperate need" to work in their own practice and to have substantial blocks of time to do this.

Future looking

The issue of time is a consistent theme in this paper. Another theme is that pedagogic skills need to be coupled with content-knowledge. In the case of Visual Education, this is grounded in practical performing/creating/making.

For courses qualifying teachers for Early Childhood, Primary (and Middle School) sectors, the message was that limited time in a crowded course, coupled with the generally poor levels of students' prior experiences, created many challenges in terms of adequately preparing graduates for teaching Visual Education. As one lecturer said, "Improving the effectiveness of pre-service teacher education programs is vital if the quality of classroom visual arts is to improve."

All learning requires allocation of time, however subjects that represent forms of embodied learning such as studio and materials-based practice, have a specific need for time - substantial blocks of time. Performance/creating/making is the basis for Visual Education so this creates special demands in terms of time allocation broadly speaking and the contiguous nature of this.

The whole area of preparing teachers to teach Visual Education in the Early Childhood and Primary sectors needs specific attention. The limited or non-existent opportunities for student-teachers to develop practical performing/creating/making capacities and understandings about the value and significance of 'visuality' and creative behaviours in education, means that improvements in the delivery of good quality Visual Education nationally across the Early Childhood and Primary sectors cannot be guaranteed unless alternative and/or more supportive strategies are introduced.

One possibility is the wide introduction of specialist and/or artist-teacher models of teacher preparation in this area. The artist-teacher is a concept that has purchase in the USA system. Artists often want part-time, peripatetic or project-based employment. Since the norm is for artists to have completed a university undergraduate course, short post-graduate certificates providing a pedagogical and educational framework of understandings and skills, could be offered by universities. The relevant teacher registration organizations would need to recognise such qualifications. Alternatively, a one-year Graduate Diploma for Primary school Visual Education or Arts specialists could be developed. Such teachers would provide a focus on Visual Education but ultimately, elements of Visual Education need to feature across the whole curriculum. Either way, preparation of teachers for the effective delivery of Visual education in the early Childhood and Primary sectors is a major challenge that requires a significant shift in thinking and strategies for provision.

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